approach

AUGUST 1984 THE NAVAL AVIATION SAFETY REVIEW

Fight Safely

By Air Commodore D.T. Bryant
Commander, 1st Wing, RAF

I have never been able to generate much enthusiasm for "Flight Safety" per se. For me it has negative overtones which I have always found difficult to reconcile with the positive attitude needed in the application of air power. At heart I am, and always have been, a "Fight Safely" man. Don't be misled; the difference is significant. I believe that aircraft should be flown to the limits of their performance and equipment, both academically and tactically, for as recent events reminded us that's where we will operate when the action starts. The problem is that to practice this safely is a remorselessly demanding challenge; one which in principle applies equally to all who wear an RAF aircrew brevet, albeit in practice some elements of our group face a more stern test than others.

How are you all to rise to this challenge consistently, for nothing less will suffice, and to wrest the initiative back from the Flight Safety lobby? The short answer is to stop having "aircrew error" accidents. For only then will our service have the evidence on which confidently to reject those siren voices whispering "Do we really need to do it?; isn't it a bit risky?; we'll have time to brush up before the shooting starts," etc., etc. Every time this group produces an aircrew error accident, and four pilots have killed themselves needlessly in my brief time in appointment, it becomes more difficult for operational imperative to be argued in an increasingly unfavorable environmental and economic climate. The answer is in your hands, but perhaps my experience can sign-post a way, maybe the only way, to this achievement.

I should perhaps first take a leaf out of our deputy commander in chief's book and establish my credentials. I have a checkered accident history which includes a Hunter, a Meteor and a Gnat. The first two were attributed to technical failure but the latter was the direct result of my showing off. I therefore write not from the olympian heights of my appointment, but as an aviator who has experienced self-induced professional humiliation. Those of you who have been similarly stupid will know the emotional scar this leaves. I've also had the good fortune to command at every rank from Flying Officer to Group Captain, so I like to think I've been where it's at, even if that was some time ago.

So what has this hard-won experience taught me that I can pass on as helpful advice? First, let's reflect on what you have going for you. You are taught the requisite skills in the best training system in the world. You are shown how to apply those skills in a graduated challenge on your squadrons, learning from as you progress. So all of you know what to do, what not to do and what not to attempt if you are unsure. It is my perception that the only thing some of you appear to lack is the self-discipline to apply your skill and experience consistently.

If you think that a harsh judgment, may I remind you that yours is an elite profession in which excuse has no place; indeed self-criticism is surely the second pillar upon which the "Fight Safely" philosophy rests. Behavioral scientists, statisticians, scapegoat supervisors, etc., and discreet cubicles where you can scribble unattributable confessions have no place in a harshly professional Fight Safely environment and therefore offer no potential for self-deception or for exercising the soft option. I am, for example, much saddened when I read CONDORs (Confidential Direct Occurrence Reports similar to "There I Was"), which tell me little except that the writer hasn't the strength of character even to conduct himself honestly at a routine debrief.

What hope have we of ever achieving my ideal if you won't face up to the truth that your supervision is your problem, your behavior is your problem. There is no hiding place.

Our ability to fight a war tomorrow, and an airman above all other military animals cannot afford the luxury of contrary delusion, depends on training to "Fight Safely" in peace. The freedom to do so realistically will come only if and when you are able collectively to demonstrate far higher self-critical standards than have been apparent in the recent past, where lapses in self-discipline give senior commanders no choice but to be conservative. I am particularly well placed to prosecute a "Fight Safely" campaign, but I need a better track record from you if such an initiative is to succeed.

I know you can hack it . . . so how about some proof? Good luck . . . for we all need some of that, too.

This originally appeared in the RAF 1st Wing publication, Ostrich, of Autumn 1983.

NAVAIR 00-75-510

inside approach

Vol. 30 No. 1

F/A 18s of the first three Marine squadrons to transition to the Hornet fly in formation. (McDonnell Douglas photo by Harry Gann.)

FEATURES

DEPARTMENTS

A Wingie and a Prayer . . .

(Or are you a pawn in the chessgame of life?)

By Peter Mersky
Approach Staff

The day had not started off well for either the lieutenant or the recently arrived jaygee, fresh from training in the RAG. The lieutenant had come out of a morning meeting with the executive officer and the other department heads. The XO had not been pleased with certain situations in several shops and had told the assembled department heads to clean up their collective acts. The jaygee had had problems develop concerning his move into the local area and had left his wife to handle things alone while he ran to catch his brief, only to find the flight cancelled due to weather.

The weather finally broke in the early afternoon, clearing enough for the duty officer to okay the previously-cancelled mission. Although there was still a good deal of thunderstorm activity, the two A-7s broke ground on schedule and headed for the operating area. The flight dodged clouds and buildups all the way to the range, and when they emerged from one particularly large mass, the wingman was flying on the lead's port side. The only problem was that the first Corsair was in a steepening port turn, descending.

With his eyes on the lead aircraft, the wingman was unaware of the rapidly approaching ground and the lead was temporarily occupied with folding his chart in a surge of housekeeping fever. By the time the lieutenant pulled his head out of the cockpit, it was too late. Screaming a warning into the mike, he rolled hard right and pulled, narrowly missing a large clump of trees. His wingman was not so lucky. Concentrating on flying wing, the younger pilot did not have enough time to fully react to his leader's call, and plowed into the same trees.

Recent mishaps have indicated a need to readdress the responsibilities of a flight leader and those of his wingman. Just what are these responsibilities? Obvious, you say. The leader leads; the wingman follows, Basically, of course, that's true. The leader is usually there because he has the greater experience and skill. But he can't be followed blindly. The wingman is still pilot in command for his aircraft. He has to be just as aware of what's going on and just as ready to speak up if things go wrong.

Cdr. John Warren, Branch Head of the Attack/Fighter Analysis Branch at the Naval Safety Center, and an experienced A-7 pilot, recently commented, "Responsibility is the key word. The lead is responsible for the flight, from brief to debrief, and in particular the safety of the flight and successful completion of the mission."

In most circumstances, careful preflight planning and briefing are the ultimate insurance for a successful hop. Everyone would agree with that, but are you *sure* that the brief you give as the lead is sufficiently understood? What may be painfully obvious to you as a senior pilot and flight lead, may appear somewhat more confusing to a junior aviator in your flight. OPNAV Instruction 3710.7K, paragraph 232 states: "The status of each member of the formation shall be clearly briefed and understood prior to takeoff." It is possible you might have to risk insulting someone's intelligence by asking if they understand. Better that than having to tell their next of kin how their husband or son died, or the members of an AMB. Leave no doubts, no questions unanswered.

Occasionally time is a problem. All of a sudden you realize that you have to rush through the brief to man up and launch on time. The only remedy for that is not to let yourself get into such a position. Allow time for a proper brief, with a question and discussion period, too.

Once in the air and joined up, the lead's responsibility more directly affects the progress of the mission. It is his ultimate responsibility to bring that flight through any conditions encountered. Conditions do change — weather, aircraft, crewmembers in the cockpit — but that's why you're there as lead: to supervise and *lead* the flight. Be aware of your section aircraft and their position within the flight formation, *constantly*. If you perform a maneuver — even a simple turn, and especially in any kind of weather — will your section be able to follow you through smoothly?

Two A-6Es launched from USS *Flattop,* originally briefed for a bomb/ACM mission. After launch, they were directed to contact an orbiting Hummer for a change in the mission, and were tasked with surface search duties. The Intruders descended and headed for the targets, which was a Soviet group operating nearby. The A-6s made two runs abeam the Russian ships, and the lead pilot commented enthusiastically on the great pictures he was getting. On the third pass, the flight leader banked 10 degrees to port to allow his


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bombardier/navigator (BN) to get some through-the-cockpit photos as they flew alongside the ships. His wingman was flying low, behind and to the right. Without warning, lead banked right, into the wingman, a young, relatively inexperienced first-tour pilot. The lead's BN tried to keep the wingman in sight, anxiously looking for the second aircraft to slide into view on the left side.

After a few seconds, the wingman did not reappear and the lead banked to see an area of white water, indicating the crash site where his wingman had gone in. Apparently, the lead's sudden, unannounced turn into his wingman had caused the second pilot to begin a rapid closure, and as he tried to correct, he entered an accelerated stall at low altitude, from which recovery was impossible. The pilot and BN of the second A-6 were lost.

Two CH-53s crashed on a mountainside in rain and fog; the entire crew of the lead helo and the crewchief of the wing helo were killed, while the remaining crewmembers of the wing aircraft sustained major injuries. The list of cause factors touched all parts of the command from the CO down to the flight leader and wingman. Besides attitudinal problems there were basic flight lead mistakes. Trends in personal development and flight training were ignored at the highest squadron level. But the direct reason for the mishap was the "can-do, pressing on" attitude of the flight leader who was an officer beset with personal problems and a social engagement at the end of the flight.

The preflight was cursory at best, last minute weather information being virtually ignored. The flight leader, although acknowledged as a good "stick," also had a record as a flathatter and one who periodically ignored NATOPS. Unfortunately, he had established some influence amongst the more junior members of the squadron. The squadron command also took a lackadaisical attiude towards cross-country approval and allowed this mid-level pilot to continue planning and eventually execute a long flight with very little concern for predictable possibilities such as weather deterioration and terrain.

When the flight of two helicopters lined up for takeoff on the second leg of the trip, they were told by the tower that the field was below minimums. The flight accepted a special IFR clearance, and after reaching the assigned altitude and course, told departure control they were now VFR. Shortly afterward, radar observed the flight descending dangerously low; the terrain was of a gradually rising nature.

Witnesses on the ground later said they saw the two helicopters pass overhead and commented on how low the aircraft were. The witnesses then heard sounds of two explosions as the aircraft crashed into the side of a cliff and into some surrounding trees.

The major input to this mishap was the failure to heed accurate weather information, as well as considering the changing terrain over which the flight would proceed. Given the record of the flight leader, it is unfortunately not surprising that he chose to ignore the basic tenets of flight planning and pressed on when common sense would have dictated a 180-degree turn and recovery.

Weather is the cause of a good deal of trouble in lead/wingman mishaps. It is the flight leader's responsibility to obtain a thorough, up-to-date weather forecast, and to make judgments concerning the flight, soundly based on the forecaster's information. Here is an area where it is well within your prerogative and capability as a seasoned aviator and leader to control the situation, even down to canceling the flight in an extreme case. With a relatively junior wingman, the leader's responsibility is even greater, and to place his wingman in a compromising situation is unforgiveable.

Three A-4s launched during an afternoon period of unsettled weather. En route to their target area, the flight encountered deteriorating conditions with lowering clouds. Trying to maintain VFR, the leader brought his aircraft increasing lower, under the ceiling. However, he finally concluded that it was fruitless to continue the flight and informed his wingmen of his intention to return home.

The Skyhawks began a 180-degree turn, descending to about 600 feet, still trying to stay below the overcast. During the turn, the three jets, now down to 100 feet AGL, struck some trees. The lead was lucky; he remained in the air. But his wingmen crashed and were killed.

Basically, then, a flight leader's responsibilities could be summarized as follows:

— He is totally responsible for all phases of the flight, on the ground and in the air.

— The completeness of delivery and understanding of a preflight brief rests directly with the lead. He should COMMUNICATE and brief any change which occurs during the flight.

Two Harriers launched into less than ideal weather for an ordnance delivery hop. Ceilings were little better than 500 over land, with a slight improvement over the water. Yet, with marginal weather all around, and a wingman recently returned from a month's leave, with minimal flight time since his return, the lead pressed on, calling for some high-speed maneuvering turns at low altitude. On the third pass, the flight lead saw his wingman begin to roll wings level, but in a descending attitude. Shortly afterward, the second AV-8 struck the water, killing the pilot. The Harrier went into 10 feet of water and recovery was eventually accomplished. The pilot had made no attempt to eject, and it was estimated he had been trying to keep his leader in sight. Coupled with his lack of recent flight time in a demanding airplane, in a demanding flight environment, the stage was set for the disasterous conclusion to his flight.

The mishap pilot, prior to manning up, had expressed his

Approach (ISSN 0570-4979) is a monthly publication published by Commander, Naval Safety Center, Norfolk, Va 23511 For sale by Superintendent of Documents, U S Government Printing Office, Washington, D C 20402 Requester publications postage paid at Norfolk, Va , and additional entry offices

. . . radar observed the flight descending dangerously low . . .

lack of confidence, due to having been away from the airplane for so long (he had also recently returned from two months TAD, in addition to the month's leave), and had doubts about the mission being flown in such marginal weather when he was not ready for it. His misgivings had been disregarded by not only the flight leader, but the squadron CO, in an ongoing attempt to gain flight time and sorties. Given the prevailing attitude of the squadron at the the pressure to brief and launch was irresistible. After launch, the flight leader continued the flight, instead of cancelling the hop, even after seeing the weather for himself, as well as disregarding his wingman's lack of experience and preparedness to handle the mission and weather.

Now, what about the wingmen's role in this evolution? Granted his responsibilities are somewhat simpler — though no less important — than the leader's. But simplicity can be deceptive. It is easy to nod your head in understanding during a brief and man your aircraft when in reality there are gaps in your comprehension, or even agreement, with the way the flight is to proceed.

If you don't tell the lead that you do not fully understand his instructions, he will never know. By the same token, if during a flight things turn sour, weather or aircraft problems crop up, don't keep it to yourself; let your leader know. He may be unaware of your predicament. *Above all, COMMUNICATE.* Even though you're flying someone else's wing, you still command that aircraft you're in. Its safe operation and return rests, in the end, with you.

It might be said that all the time spent flying wing is training — good training — toward the time when you move up to flight leader status and assume that heavy responsibility. ◄

Takeoff/Landing Hazard on Intersecting Runways. A P-3C was cleared by the tower for takeoff. The controller asked whether the aircraft could be airborne within 30 seconds. The pilot "rogered" and switched to departure control. Another P-3 was three miles out on a PAR to an intersecting runway. With the landing P-3 at two miles and takeoff roll not yet initiated by the other P-3, the tower operator cancelled the takeoff clearance. However, it was not received and the P-3 took off. The P-3 taking off passed the intersection at 100-150 feet at about the time the landing P-3 touched down on the numbers. The intersection was 5,000 feet from the approach end of the landing runway and 6,500 feet from the takeoff end of the other runway.

An FAA regulation states that during radar departures controllers shall: "separate a departing aircraft from an arriving aircraft on final approach by a minimum of two miles, if separation will increase to a minimum of three miles within one minute after takeoff." These minimum separation distances were not maintained during this incident.

A potential for a midair existed had the landing P-3 waved off or the P-3 taking off aborted takeoff. As a result of this incident, the tower operator's tower rating was suspended and the operator placed in a recertification program. The approach/departure controller's facility watch supervisor designation, terminal radar approach control rating and radar arrival/departure controller qualification were revoked. The controller was also placed in the recertification program.

AIR BREAKS

The airfield SOP was changed to require departing aircraft to check in with departure control before commencing the takeoff roll in order to expedite cancellation of takeoff clearance if necessary and to preclude lost communication after takeoff.

The requirement to hasten the takeoff did not exist during this incident. This fact, coupled with failure to follow safe operating procedures, could have resulted in tragedy. No peacetime operation is worth the potential consequences of such actions.

Oil Starved TA-4J. While on a routine cross-country training flight from NAS Kingsville to NAS Memphis in a TA-4J, Lt. Pete Rucci and his student naval aviator, Ens. Robert Duncan, of VT-22, noticed a slight drop in oil pressure. This routine cross-country was about to be "unroutine." Although still within operating limits (40 psi), Rucci immediately checked the oil quantity indicator and suspected that a loss of oil was occurring as the less than 80 percent oil light illuminated. Rucci requested an immediate divert to Barksdale AFB, Louisiana and requested an en route descent for precautionary approach.

After switching to Barksdale Approach, and less than one minute after the reduction in oil pressure indications, the 20 percent oil light illuminated and oil pressure started decreasing below inflight minimums. Setting power at 88 percent, Rucci squawked emergency, contacted Barksdale Approach and complied with vectors for a straight-in precautionary approach. Passing 15,000 feet and approximately 20 nm from Barksdale, the oil pressure continued to decrease and was passing 10 psi. Rucci briefed his student for possible ejection, passed appropriate information to approach and continued his descent. With inflight visibility less than optimum due to haze, the field was acquired at 6 DME and tower was contacted. Flying a flawless precautionary approach, with oil pressure down to 3 psi at 1½ nm from the field, Rucci landed the stricken aircraft at approximately 160 knots, commenced braking at 110 knots, turned off the first available taxiway and immediately secured the engine to prevent any additional damage. The total time from recognition of the impending engine failure to landing was approximately five minutes. Subsequent investigation revealed a chafed oil servicing line which caused total loss of engine oil.

Rucci and his copilot, Duncan, responded promptly and correctly to this critical emergency. They are deserving of an attaboy and well-done.

Oil Guzzler. After making a final landing in his SH-3H, the pilot noted rapid fluctuations on the No. 1 engine oil pressure gauge of plus or minus 36 psi. He notified maintenance that he suspected a possible engine oil pressure transmitter problem. After engine shutdown and during postflight inspection, the pilot noticed an unusual amount of "soot" aft of the No. 1 engine exhaust. During the turnaround inspection, the plane captain had to add 2.1 gallons of oil to bring it to the normal service level of 2.7 gallons. The helo had flown 2.2 hours on the flight. All other instrument readings were normal.

Most pilots perceive engine oil pressure loss as a gradual reduction causing small pressure fluctuations. Frequently the pressure transmitter is blamed when there are large pressure gauge fluctuations and no other indications. However, such was not the case in this instance.

Aircrews should be aware of this occurrence and reminded that secondary indications may not always be evident. Pilots must learn to listen when the engine is trying to tell them something. Believe the gauges!

It Pays To Brief Thoroughly. An F-4S had taken off from MCAS El Toro on a TransPac to MCAS Kaneohe Bay. When it was 870 miles en route, the crew experienced a low oil light prior to reaching ARCP 2 (aerial refueling control point). They followed NATOPS, secured the affected engine and turned back for the West Coast. They could only maintain 10,000 feet at 0.5 Mach with full internal and external fuel while single-engine. They calculated that they would not have sufficient fuel to reach the nearest divert field, San Clemente. After transferring fuel from their external wing tanks, they jettisoned the tanks. Eventually they were able to climb to 17,000 feet. Thus, at this altitude and with a revised fuel estimate, they were assured of landing back at El Toro where they made an uneventful landing.

This crew had planned their flight well. They briefed for every conceivable emergency including the one they experienced. Therefore, they acted according to their brief and NATOPS. Their timely evaluation of their fuel situation saved a valuable aircraft and spared them the hazard of an overwater ejection.

A well-done and tip of the cap to this safety-minded aircrew from Marine Fighter Attack Squadron 232.

A New Approach to Safety

By Lt. Micheline Y. Eyraud, MSC, and R. Paul Kinzey
Naval Safety Center

THE F-14A pilot and RIO briefed for an early afternoon ACM flight, 1 versus 1, against the local aggressor squadron. The two aircraft launched on schedule, flew to the air combat maneuvering range (ACMR) and completed several engagements. Prior to the final setup, the F-14's RIO reported his radar was down, as was his tactical information display (TID). The engagement was terminated and the flight vectored back to base.

A bleed duct caution light illuminated before entering the pattern. Soon all the UHF equipment became inoperative. As the pilot retarded the throttles, various gauges began fluctuating; the RIO reported circuit breakers popping; and the aircraft began porpoising. The fire warning light lit up and the cockpit began to fill with dense, black smoke. After trying the control stick and feeling no response, the pilot initiated a command ejection at 13,000 feet under 100 knots. The pilot got out; the RIO did not.

Investigation revealed that the radar system coolant had sprayed into the environmental control system compartment, where it ignited, rapidly becoming a major fire which spread to the control and electrical systems. The intense heat

also rendered various detonating lines on the RIO's ejection seat inoperative, thereby making rear seat ejection impossible.

This was not the first time, nor the last, that a Tomcat has been lost due to a coolant-induced fire. Unfortunately the capacity for incidents of this nature had not been anticipated. Neither the contractor nor the Navy had thought of the possibility. Such anticipatory considerations, and actions to prevent the occurrence, are rapidly becoming part of the Navy's overall safety program.

System safety concentrates on a preventative, before-the-fact identification and management of potential hazards. Central to the philosophy behind system safety is that safety is not inherent to a system; risk can always be reduced and hazards can be controlled through identification and analysis. The major difference in this approach and all other safety programs is that it is *proactive*. You don't have to wait for a mishap to occur to identify a problem, so changes don't always have to be "written in blood."

"System" is the key word in the term system safety. It is defined as a combination of things or parts forming a complex whole. In an aircraft there are a number of systems — fuel, hydraulic, electrical, etc. — and together they form a larger system: the aircraft, itself. This system comprises such variables as the mission being flown by the aircraft and the operating environment as well as the personnel who operate and maintain the system. It is this larger system which is analyzed in the system safety process to identify potential hazards. Where these variables interface is of special concern since at this point mishaps often originate.

At the heart of the system safety approach is the idea of hazard analysis. This refers to a systematic examination of potential sources of danger. Although it is a life cycle process, primary emphasis is placed on identification of hazards early in the design stage where changes can be made fairly easily. Once the design for a system has been "locked in" changes become more expensive and, therefore, more difficult to make.

An aggressive Navy/contractor system safety program was initiated for the F/A-18. The contractor expertise, balanced with Navy system safety assistance, provided management with informed decisions on hazards. Using examples of problems experienced with the F-14, strict adherence to fire protection design criteria saved at least one production aircraft. An inflight engine bay fire was contained within the fire zone and the aircraft saved. A similar fire on most other aircraft could have resulted in a strike mishap.

An important source of information used by system safety in this hazard analysis is historic safety data from previous systems — lessons learned. The old saying that "there are no new problems, only new people" is true. To break the cycle of people unwittingly building mistakes into system after system, problem areas which deserve increased attention are highlighted before system production by studying lessons learned. Therefore, when reports are submitted under the Naval Aviation Safety Program reporting system, progress is made not only in correcting deficiencies in existing systems but also in systems which will come on line in the future.

The ADEN gun system installed in AV-8A/C aircraft had two basic design deficiencies which could have prevented shipboard use. The projectile cartridge could easily be fired by RF energy emitted from the numerous shipboard radars and transmitters. Another safety design problem was the lack of an inflight clearing mechanism. Without this feature, the AV-8 could land with rounds in the chamber. The risk of a shipboard conflagration due to unintentional gun firing is too great to allow for flexible operation. A new gun with both a round-clearing feature and percussion, vice electrical, primers is used in the AV-8B.

Once the hazard has been identified, it must be determined whether or not the risk associated with the hazard is acceptable. Conceptually, the principle of risk is simple. It is defined by the likelihood of occurrence and severity of the hazard. However, the assessment of risk is logically complex since it requires that a value be placed on human life and serious injury.

The outcome of this process determines the extent and nature of preventative controls which need to be applied to decrease the risk to an acceptable level. The most severe hazards are addressed through design changes. Engine turbine blade retention on dual-engined aircraft is an example of a design feature which prevents aircraft loss/ damage from blade failure. Lesser hazards are addressed through the introduction of safety devices.

The CH-53E entered service without crashworthy pilot/crew seats, although such structures were available. A crashworthy fuel system was introduced, however. Other refinements are being added as the Navy funds the contractor system safety effort. Several incidents occurred in the fleet before the benefits of system safety programs could be realized.

Typical examples of safety devices include fire extinguishing systems, spin recovery assist systems and manual fuel control capability on single-engine aircraft. When hazards cannot be effectively eliminated or the risks reduced to an acceptable level, warning devices are used. Fire and ground proximity warning devices and canopy open and low fuel caution lights are examples of devices to warn personnel of impending danger. Finally, NATOPS procedures received in fleet readiness squadrons are used to control hazards. Both procedures and training are responsible for a major drop in the mishap rate but are the least effective method of hazard control due to personnel turnover.

System safety is the state of the art in loss control management. Those involved in aviation safety will be hearing a lot about it in the future. To some, it will mean a lower mishap rate and the preservation of assets, but to those of you reading this article, it will mean safer, easier aircraft to fly. ◄

The Flat Earth

By Lt. Gordon B. Aaseng
VAQ-33

THROUGHOUT the history of civilization, the human species has formulated theories about how the universe works. The theories are based upon what the more perceptive, or perhaps more vociferous, individuals observe, or at least *think* they observe. Sometimes the theories are proven to be true, but often additional observations discredit even some of the most strongly held beliefs. Until the 15th century, it was widely accepted that the earth was flat (and woe to him who suggested otherwise!). Long after the round earth concept was grudgingly accepted, the geocentric universe theory (the belief that the sun and stars revolve around the earth) still held widespread appeal with the masses. A popular 19th century belief was that man would never be able to fly (or at least *should* not; on the latter point, they may be right for certain individual cases). And in the 20th century, it is commonly held that logical, scientific thought has done away with all ridiculous false assumptions.

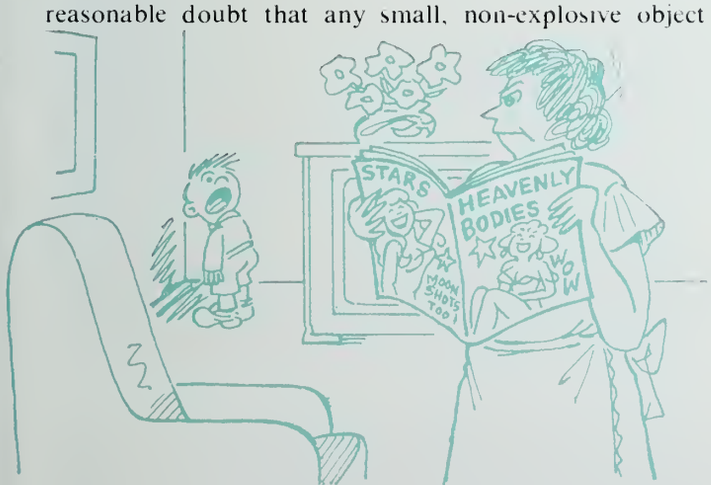
In the aviation community, a popular theory abounded until the early 70s that the sky was so big in relation to the size of aircraft, that no two planes would ever collide (the Big Sky/Little Airplane Theory). Even the less than astute observer has come to accept that this is not the case. But now, in the enlightened 80s, it appears that there is a closely related common belief that an object inadvertently dropped from an airborne vehicle will definitely *not* cause injury or damage on the surface below. Until recently, I had not heard the "Large Earth Theory" explicitly stated. I reasoned that there must be a considerable following of such a theory. However, since so many things were falling from planes and very few people seemed to be doing anything to prevent these occurrences, most people obviously felt very assured that the things that they let fall would fall *harmlessly*. Otherwise, I was absolutely certain that they would have done something to end the light but steady drizzle of assorted doors, panels, caps, pods, tanks, canopies, windows,

Theory and You

bolts, wheels, light ordnance, nose cones, control surfaces and various other objects that have rained down upon the earth. The belief in the harmlessness of these falling pieces is readily reinforced by observation: something somewhere in the world falls from a plane every day, but when was the last time you heard of one of those chunks actually hitting something? Aha! Sounds like proof to me! People and their constructions are spaced far enough apart (except for open air assemblies of persons which we don't fly over) so that all falling objects drop in between them!

Several scientists have been studying what is formally known as the Theory of Human Invulnerability to Objects Traveling on Random Vertical Trajectories. None of their work has been published yet. I recently talked with two of them who hold differing opinions on the subject.

According to Dr. M'et al-Bendar of the Gravity Research Institute: "For over 75 years we've been dropping things from aircraft. We believe that we can prove beyond all reasonable doubt that any small, non-explosive object dropped randomly from an aircraft, that is without aiming it or consciously planning the drop, has absolutely no chance of striking a person and only a remote chance of hitting anything of value." Victor Ames, B.S., M.S. B.S. of NASA's Lunar Surface Simulation Program disagrees. He has been studying the craters and pockmarks created by man-made objects from Skylab to skydivers' ripcords that have inadvertently fallen to the surface over the past 11 years. "Although the data is still preliminary," he postulates, "if we continue to drop objects at the present rate, I have calculated that in the next 20 to 25 million years, the entire earth's surface will be completely covered with aerospace vehicular debris. It is completely reasonable to expect that some of the surface inhabitants will be co-located with the time-space coordinates of the impact point of a small fraction of the falling objects and therefore, their life process will be degraded or terminated."



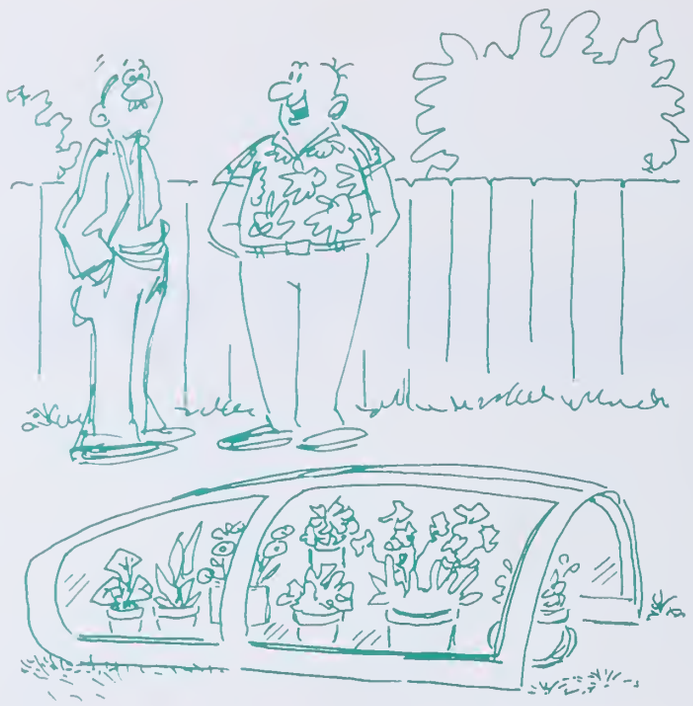
"I'm *not* lying — it fell from the sky!"

We in naval aviation have certainly made important contributions to the research of these and other scientists. Dropping parts into bodies of water, woods, fields, swamps, unoccupied roads and backyards, we seem to be supporting the position that the objects will not cause bodily harm or property damage. In the interest of research, we continue to drop things at random from our aircraft. Many of the parts are relatively cheap, so we're making important contributions to *science* and at a reasonable cost.

However, just in case the large earth theory is eventually disproved, there are some precautions that can be taken. The ordinary earthbound folks could:

- Stay inside.
- Wear heavy-duty protective helmets.
- Look up at all times to enable timely evasive maneuvers.

The aircraft drivers, maintainers or inspectors, on the other hand, just *might* be able to protect the surface dwellers from plummeting debris, without forcing them to use



"We found it in our yard — Maw calls it her greenhouse!"

protective equipment or make drastic lifestyle modifications. Some of the simplest steps we might consider:

- Latch all the latches all the time. Double check them. *Triple* check them.
- Dzus the dzuses. Look again. They're small and easy to miss.
- Inspect the latches and fasteners before closing panels and doors. A worn, bent or broken one might look normal.
- Be extra careful whenever a panel needs to be opened, such as for troubleshooting after your preflight inspection. The normal system of checks has been broken. Make sure that you get a thorough final inspection before going flying.
- Make sure panels, doors, canopies and external stores work and fit properly. If a part is bent, cracked or broken, repair or replace it. Superglue, sealant, caulk, duct tape, safety wire, nails, bubble gum, hopes or prayers will not hold a worn out part on a 400-knot flying machine.
- Be doubly careful when operating away from home base. People who are not familiar with your plane or procedures have touched your aircraft. One of them might have done something totally unexpected.

The falling object research files are full of case histories. Here's a random sampling:

A T-2 was holding short for takeoff when a generator light came on. After returning to the line, a troubleshooter tweaked something electrical, thumbs up were passed all around and the crew left again in their quest for the "X." Shortly after takeoff, the equipment bay panel struck out on its own flight path. Nobody had bothered to latch all the latches after the electrical problem was fixed.

An A-3 came back from a flight without a fiberglass ADF antenna cover. The panel had been "repaired" the previous day after someone noticed that it was breaking up around the edges. It still wasn't a perfect fit after fixing it but everyone figured that it was "close enough," even though some of the screw holes were way too close to the edge of the panel. To fill in the gaps around the edges, a sealant was applied. (At least it *looked* better.) The laws of aerodynamics and gravity took over once airborne; the large earthers won this round as no complaints were received about it going through anyone's plate glass window.

An A-4 driver closed the canopy but forgot to lock it. As advertised, it left the aircraft at 240 KIAS, landing in a backyard in Navy housing. This one had real potential to prove once and for all that falling parts can kill, but narrowly missed the kids at play and left the theory open for more debate.

On a cross-country flight, an aircrewman opened a panel to add some oil. No one in the crew specifically remembered checking the panel, which is held on by four Dzus fasteners. When they landed, the panel was gone. Working off a transient line, the normal check system was not in effect.

A nugget in an A-6 dropping practice bombs, wanting to concentrate fully on his tracking during the run-in, set up all the switches, including the master arm switch, prior to roll-in, contrary to what had been briefed. Then he checked to make sure that he knew where the pickle switch was and gave it a click. "Seven o'clock at about three miles," came the call from the spotter when the bomb landed uncomfortably close to a small country store.

Five hundred years after people accepted that the world is not flat, it is difficult to believe that so many people could maintain a theory that falling objects will be harmless. But how else can one explain the preponderance of objects released over the populace we are *supposed* to be *protecting*? Is there any other rational explanation?

Maybe there is . . . Yes! It's beginning to come in clearly. Maybe it isn't that people really think that a falling chunk of airplane won't hurt anyone. There *is* one other theory that could explain the phenomenon. It's a theory that will take us into the 21st century; let the 15th century keep its flat earth ideas. Nearly everyone believes this one, to some extent at least. It's virtually impossible to convince an ardent believer that it isn't true. It explains not only why things keep falling off airplanes at an unabated pace, it can be used to help account for every accident, mishap or incident, big or little, aviation or non-aviation. It's a belief that only *somebody else's* falling part will do the damage. *My* mistake, *my* carelessness or *my* momentary lapse in concentration won't hurt anyone. Those things only happen to *other* people. If I make any mistakes, they're only little, insignificant ones; the ones that cause damage and injury are done by other people (the geeks!). It is the Theory of Individual Invulnerability: the absolute belief that "It Won't Happen to ME!" ◄

Twilight Terror

By Lt. P. Kem Siddons
NROTC Instructor

I VIVIDLY recall my introduction to NATOPS at flight school in Pensacola and thinking to myself, "These guys are serious about safety. I'm glad to hear it." Armed with fresh knowledge of T-2C NATOPS and confident of my abilities, I progressed quickly through the NFO syllabus, handling all written safety tests and instructor emergency quizzes without incident. In time, I earned my wings of gold as a Naval Flight Officer, eager to hit the fleet and fly a "real" airplane. Again I said to myself, "I'm going to do this safely and by the book. NATOPS will be my Bible."

Following replacement training in San Diego, I reported to an East Coast S-3 squadron as it deployed to the Mediterranean. The cruise went smoothly as I honed my newly acquired skills. All the schooling and training were beginning to pay off. I had "arrived." Little did I realize that the "I can hack it" syndrome was rapidly setting in.

Upon our return home, the squadron was tasked with providing surveillance services off the southern tip of Florida in support of the Cuban refugee operations. I was assigned as a COTAC* on a two-plane twilight launch and looked forward to a routine five-hour hop.

Brief and man-up were uneventful and our two Vikings launched on time into the dusk. Our crew settled down to the routine task of skirting Florida's East Coast at 27,000 feet en route to the operation area. We flew wing on the southbound leg, intending to lead the flight on our return. I relaxed and thought of getting back to the comforts of home. Then it happened.

The SENSO** in the tunnel reported smoke in the cockpit and the TACCO*** quickly confirmed that there was definitely a problem. No sooner had these words been spoken, then the acrid fumes of an electrical fire creeped into the front cockpit. In accordance with NATOPS, our crew donned oxygen masks. Cockpit pressurization was dumped. Before securing the electrical buses, the pilot informed the leader that we had a probable electrical fire and were diverting.

One cannot imagine the intense silence when all the electrical power is secured in an S-3. Just the faint whisper of the turbofan engines and the rhythmic breathing of the crew on oxygen can be heard. I was mesmerized.

Suddenly, my mind was jogged by my pilot frantically yelling at me, "Find me a *!#*&! field!" Only then, did I realize how utterly unprepared I was for this "contingency." I had the APU (auxiliary power unit) on line but was unsure as to exactly what systems were available on emergency power (transponder, radio, etc.). Additionally, the windscreen was fogging due to decreased air conditioning under APU power, and visibility was quickly deteriorating. With nightfall rapidly approaching, it was paramount that we find a field.

Just when it looked as though things were going to get worse, the familiar pattern of airfield landing lights appeared on our port side. It proved to be a major Air Force base — what luck! Our pilot executed a flawless emergency landing and our ordeal was over as quickly as it began. With our bird safely on terra firma, I sighed a note of relief. I would have the opportunity to fly another day.

Our problem proved to be a faulty component in the ATR (acoustic tape recorder) which could have caused a catastrophic electrical fire had it progressed much further. Power was isolated from this system and our return home was uneventful.

In retrospect, I realize how complacent I had been about aircraft systems and NATOPS procedures. In essence, I was of little value to my crew that flight. What had happened to that safety conscious nugget?

As naval aviators, we must constantly think safety as a means to readiness and, more importantly, the preservation of human life. Each individual must learn his aircraft's systems and related NATOPS procedures thoroughly. This goes further than being able to "spit it out" on paper; one must be able to *apply* it in the flight environment. There is no room for complacency and the "I can hack it" attitude. Aviation safety is and must remain a continuous concern of all flight crew members — one not reserved for preflight briefs and safety standdowns alone.

My "smokey" ride over South Florida has provided me with the impetus to be a true professional, concerned with personal safety and the safety of those around me.

Are you ready, in all respects, to accomplish the mission safely? ◄

*COpilot/TACCO — a naval flight officer acting as copilot

**SENSar Operator — an enlisted aircrewman in the right rear seat, who monitors the submarine sensor inputs

***TACtical COordinator — a naval flight officer in the left rear seat, who manages the antisubmarine warfare problem

Lt. Wade Tallman
VA-192

After getting an unsafe starboard gear indicator, Lt. Wade Tallman of VA-192 had his wingman make a visual inspection. The wingman confirmed that, although the doors were open, the main gear had not moved and was probably stuck in the up position. After unsuccessfully performing the prescribed NATOPS and pocket checklist procedures for unsafe main landing gear, Tallman elected to take a barricade arrestment.

After reviewing procedures with the LSO, the VA-192 aviator flew the approach, engaging the target one wire and continuing into the barricade. The A-7E came to rest supported by the nose gear, port main gear and the starboard wing tip. Damage to the wing was minimized by the controlled sink rate. Although the Corsair II usually receives extensive damage from a barricade arrestment as the webbing bites into the leading edge of the wing, Tallman's airmanship resulted in no wing damage from this barricade engagement. Outstanding teamwork and competence displayed by USS *Ranger*'s arresting gear crew, flight deck personnel and crash and salvage crew in setting up the barricade allowed blue water recovery operations to continue without further delay. The A-7 was repaired aboard ship and was soon flying again.

BRAVO ZULU

Lcdr. Bob Guthrie
Lt. Bill Culbertson
VF-11

DURING a TARPS escort mission over Beirut International Airport, Lcdr. Bob Guthrie (pilot) and Lt. Bill Culbertson (RIO) felt their F-14A Tomcat shudder. The airplane showed no signs of uncontrollability, however, and the crew coasted out, escorted by the VF-31 TARPS Tomcat. Guthrie scanned his instruments and could see no sign of adverse indications. But the TARPS bird radioed that fully two-thirds of the Tomcat's starboard horizontal stabilizer was gone. (Speculation remains as to what actually caused the damage. Neither Guthrie nor Culbertson saw any tracer or smoke which would indicate anti-aircraft fire or SAMs. But the area around the Beirut airport was known to be well saturated with defensive sites. The use of shoulder-launched SAMs cannot be discounted.)

As the flight approached USS *John F. Kennedy* (CV 67), decelerating to 250 knots, the VF-11 Tomcat began to yaw left. When the landing gear was lowered, the yaw increased. At 150 knots, Guthrie lowered his flaps while Culbertson requested an emergency pull forward. The yaw became excessive, and Guthrie raised the flaps, regaining control.

Following a suggestion from the wingman, the crew pulled the circuit breaker for the auxiliary flaps, which disabled that system and prevented the flaps from blanking out the "stub" stabilizer. The main flaps were then lowered in small increments to full extension. By setting the left throttle to full military power and the right throttle to idle with full right rudder trim applied, the VF-11 crew flew an uneventful straight-in approach at 150 knots. ◄

The crew of the VF-31 Tomcat, Lcdr. Tim Higgins and Lcdr. Ollie Wright, also deserve a well-done for their aux flap suggestion and teamwork — Ed.

Lcdr. Bob Guthrie (left),
Lt. Bill Culbertson (right).

Ferry Hop

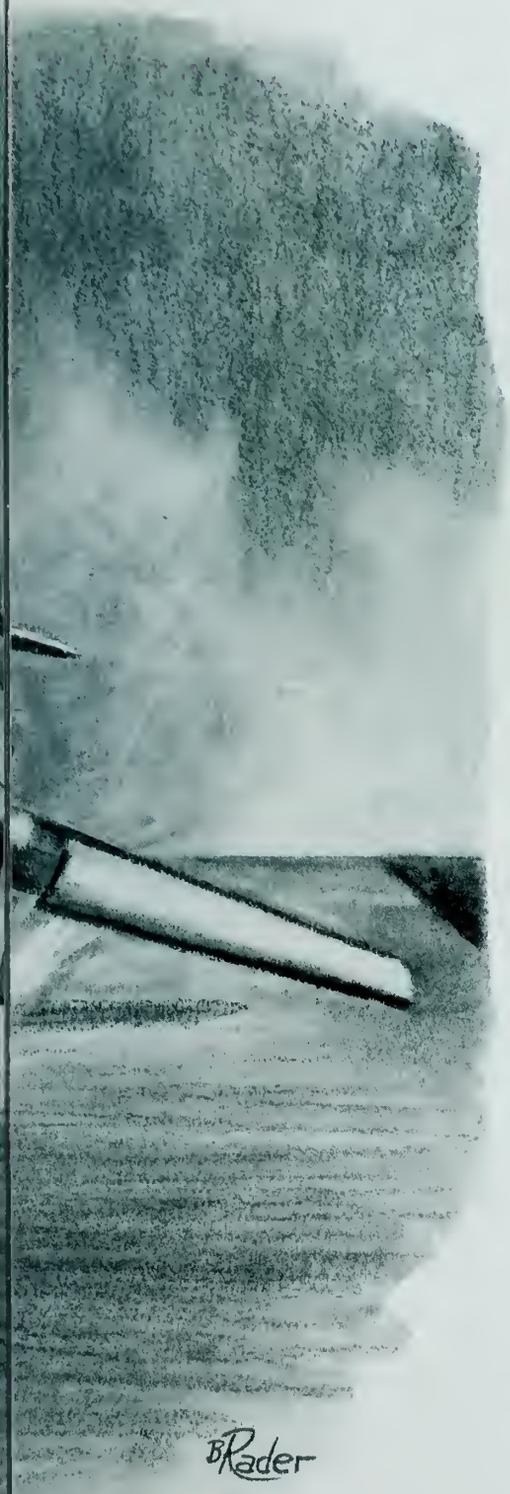
By Lt. T.H. Price
VA-27

IT started out as a routine ferry mission from NAS Homebase to NAS NARF with a stopover at East Coast AFB. Weather for both legs was forecast to be good, although a stationary cold front was situated to the north of the second leg's flight path. The pilot of the TA-4J had flown the route several times before and felt comfortable with all phases of the flight, including the 900-mile over-water first leg.

Preflight, start, takeoff and climbout went smoothly with no delays in reaching planned cruise altitude. Fuel and time checks at the first three en route checkpoints indicated that actual headwinds were less than expected. The combination of good weather, extra fuel and lack of delays resulted in an enjoyable ride and complacent attitude. Little did the pilot know that a series of events would put him behind the eight ball.

Radio contact was with Mainland Center at 220 miles from the coast with radar contact occurring 10 minutes later. Shortly after feet dry, the pilot was vectored around traffic and given further routing which added an additional 50 miles to the first leg of his flight plan. Heavy airways traffic soon resulted in a choice between additional vectors or delays and an en route descent.

After checking destination weather (10,000 scattered, visibility five miles in haze) and required fuel, the pilot decided to descend to 12,500 feet and proceed VFR up the coast with radar monitor from Center. Estimated fuel reserves were such that two practice approaches could be flown and he could still be on deck within NATOPS minimums. Although still 180 miles from his first destination, the pilot felt sure that all was right in his little world.



Approaching East Coast AFB, our pilot noticed that he had burned a "couple of hundred" pounds more fuel than he had planned. No problem, he would just make his second approach a "simulated" minimum fuel approach. Contact was made with approach and clearance was given for a TACAN penetration. During the approach, the pilot noted that he was having problems maintaining the inbound radial but assumed the problem to be bad TACAN reception or a heading error in the ADI. After missed approach, the pilot turned downwind and requested a simulated minimum fuel GCA. Fuel quantity was 1,400 pounds.

A C-130 in the GCA box pattern required that an extended pattern be flown vice the requested shortened pattern. During the approach, the pilot again noticed a large left drift on final. A request for airport winds revealed that the winds were 70 degrees off runway centerline at 40 knots, with gusts to 50. The stationary cold front was no longer stationary, and the resulting wind shift had not been reported to the pilot.

The pilot waved off his second approach, switched to tower frequency and began to assess the situation. The runway was 9,022 feet long and 200 feet wide. Overrun gear was available but it would take 30 minutes to rig the short field arresting gear. The crosswind component well exceeded NATOPS limits, and the nearest available divert field was 70 miles away. Weather at the possible divert field was 1,200 overcast, two miles visibility in light rain showers. Fuel was now 1,000 pounds.

The pilot decided to perform a flaps up approach with touchdown on the upwind side of the runway. Two approaches were made with tower providing winds every 10 seconds but were waved off due to gusting winds. The third approach was commenced with 700 pounds of fuel remaining. An aircraft heading cut of 15 degrees was required to keep the aircraft lined up with runway centerline. Just prior to touchdown, the crab was taken out and right wing down aileron and left rudder were applied. Touchdown was 500 feet down the runway and approximately 70 feet right of centerline. Full right aileron was applied and spoilers were visually checked up.

Immediately upon touchdown, the left wing went down and the Skyhawk began a left drift. Full right rudder was applied to counter the drift but was only slightly effective. According to eyewitness accounts, the first 500-700 feet of rollout was performed on only two tires. As the aircraft approached the left side of the runway, rudder became effective and left drift was arrested approximately 50 feet of centerline. Seven thousand five hundred feet of runway was utilized for landing rollout. On shutdown, fuel quantity read 500 pounds and a postflight inspection revealed that all tread and most of the cord on the port mainmount was gone.

Luckily, this flight terminated with the aircraft safe on deck, requiring only a mainmount change and one shaken (but much less complacent) pilot. Each deviation from the planned flight seemed small and unimportant at the time. When they all came together, the potential for disaster was great. You can bet that this pilot will think twice about unexpected changes in the future. ◄

A Vital Connection

By Bud Baer
Approach Writer

ON a break turn at 5.6G during a strike fighter maneuver, an F/A-18 pilot experienced greyout and disorientation. Fortunately, he maintained sufficient composure to notice his anti-G-suit hose was disconnected — a breath-taking experience!

The hose connection had been knocked out of its receptacle, probably by pilot motion in the cockpit. The pilot reconnected the hose, leveled his wings and made a "knock-it-off" call before returning to base.

Reporting the incident to his CO, he was surprised at the response: "Hey, the same thing happened to me. Obviously yours wasn't just an isolated incident. We have to figure out a fix that will maintain the hose connection and retain the quick disconnect."

"We could wrap a Band-Aid around it, but that wouldn't be a permanent solution," the pilot quipped.

The CO conducted a survey of his squadron's pilots. He learned that among 16 pilots, nine had experienced the same problem in a total of 18 separate instances. The plot thickens.

He rebriefed all his pilots on the "absolute necessity to report any and all airborne incidents, regardless of perceived significance." During a discussion with an Air Force F-16 exchange pilot, he learned that they had similar problems.

The CO made contact with the tactical fighter wing's director of operations, who advised him, unofficially, that "it is felt two F-16 accidents were possibly due to the problem."

"I was told that the fix used in the F-16 community was to tighten the female hose quick disconnect and change the angle of the receptacle," the CO reported. "I highly recommend a fix of this nature for the F/A-18 be made post haste before a pilot/aircraft are put in extremis. Until then, local procedures have been established to ensure the G-suit connection is checked as frequently as possible during strike fighter maneuvering. All G-suits have been closely inspected for fit/ wear and tear, and the G-suit has been included as a preflight briefing item."

A second but equally important issue surfacing during the discussions concerned potential incapacitation resulting from the quickness of the high G onset that occurs in both the F-16 and F-18. With the rapidly increasing use of these aircraft types, the problem of G onset "will only magnify," the CO warned.

The disconnects occurred because the female connectors were not set at the proper angle, according to PRCM Aaron C. Reynolds of the Naval Safety Center.

"The F/A-18 G-suit disconnect has an angle of approximately 45 degrees from the forward-aft centerline for proper seating of the hose to the G-suit," he explained. "When not clamped at this angle, an excessive sideload is generated, resulting in a disconnect."

Due to the possible greyout or blackout potential, an Aircrew Systems Bulletin is being proposed which may solve the problem by insuring the disconnect is pointing in the 45-degree angle, said Reynolds, who is in the Center's Life Support Branch of the Aircraft Maintenance and Material Division.

Concerning the problem of rapid G onset in the F/A-18, a new high flow, ready pressure G-suit valve is undergoing tests. Preliminary data indicates G tolerance may be increased by approximately 1G over the present system with this value. The new G-suit hose disconnect assembly proposed for use by the Air Force is also being investigated for possible incorporation in the F/A-18. ◄

Keeping Proficient With Minimum Flight Hours

By Cdr Joseph Hart
VA-27

RECENTLY we have experienced reduction in flight hour funding for non-deployed squadrons. The days of plenty when sortie races and massive amounts of accumulated flight time were marks of the successful squadrons are history.

The equipment provided by our taxpayers is not only expensive to buy but expensive to operate. Only forward deployed squadrons involved in real world tasking will be given the unlimited Chevron credit card. The amount of flight time available during this low period impacts directly on pilot proficiency and safety.

As pilots and managers concerned with the problem, it is not our job to sit around grumbling about the "good old three-sortie days and 50-hour months" and then throw up our hands and predict increased accident rates. This approach will surely guarantee that the prophecy is fulfilled. We must approach this challenge positively to develop and implement alternate ways not only to maintain proficiency but to operate safely and maximize the training per dollar.

Solutions to the problem require increased emphasis on all the aspects of our profession that do not actually involve the expenditure of flight hours and then the absolute best use of every flight hour we do fly. Your creative ideas can extend the following list to achieve the goal:

— Detailed planning, both long and short range, to map out the training cycle. Accept the fact that there will be valleys of minimum flight time and place them where they will have the least impact. Allow a sufficient buildup period after coming out of a valley before jumping headfirst into a major evolution such as a weapons deployment.

— Aggressive ground training syllabus must be established. Safety, NATOPS and weapon system training must be pursued eagerly.

— Simulators must be used often. Devise an effective and challenging syllabus. Although not an actual flight, a simulator sortie should be thoroughly planned with definitive tasking that involves not only emergency procedures review but instrument, weapon systems and EW training.

— Every actual flight sortie must be viewed as a treasured event with opportunities that cannot be squandered. Flight leaders must do prior prebrief planning to prepare for that sortie. Planning the sortie in the brief is not good enough when flight time is at a minimum and can lead to confusion or omission of critical items. Brief time must be longer than normal with sorties cancelled if brief times cannot be met.

— Strict standardization in as many areas as possible is a must and SOPs must be understood and compiled with.

— Multimission sorties must be planned. Longer sorties with multimission events are more cost effective than shorter, one-event sorties.

— Cancel sorties when training goals cannot be realized due to weather or other external factors.

— Fuel conservation must be preached. If tasking and training can be achieved at lower power settings, then do so. Transit legs to and from training areas should be executed at maximum range air speed. Don't fly at maximum endurance simply to gain more flight time and make the statistics look better. The goal is maximum training per dollar, not maximum flight time per dollar.

— As painful as this may sound, cross-country flights cannot be a part of the training program unless realistic warfare mission training can be accomplished.

— Pilots must demand full mission-capable aircraft from the maintenance department. Squadrons that tolerate partial mission-capable sorties can expect a reduction in attained training and decreased safety margins.

— Commanding officers and operations officers must recognize the reduced proficiency and its relationship to overall pilot experience. Flight schedules must be closely monitored to avoid overtasking a pilot who is maintaining minimum proficiency. Sending a nugget out on a night sortie in marginal weather when he has not flown at night for a couple of weeks is sheer folly. Why not lead him back slowly with a day launch and night recovery in good weather?

— Major training evolutions cannot be jumped into full speed after operating at minimum flight-time proficiency. A lead in, walk-before-run approach must be devised. Emphasis on aerodynamic basics, checklists and flying by the numbers must be established in this phase.

— Pilots themselves must realize a certain lack of proficiency and learn to back down from overtasking themselves in any particular training evolution.

In conclusion, the reduced OPTAR we are now experiencing is a fact of life that may be with us for some time to come. We must deal professionally with this change to avoid accidents and maximize training. Every pilot must be taking advantage of every training opportunity even though it does not involve actual flight time. With proper planning, this problem of reduced flight time can be met as safely and effectively as possible. ◄

Detachments:

IT'S a typical November morning in a training squadron. Between the morning fog and low ceilings the majority of the schedule is either sliding or has been canceled. The ops officer is pulling his hair out. He has been totally unsuccessful in getting some of the students started in weapons training. Had he been able to, it would have alleviated the workload for the upcoming weapons detachment.

I don't know what he is so excited about. All he has to do is add a couple of jets and instructors to the upcoming NAS Desert det and the problem goes away. Just think! Between the beautiful weather, great flying and high production of Xs, what more could you want? After all it will be a road show — a guaranteed great time!

Time out, you say? If you didn't, then maybe you should. Let us take a minute and examine what could be described as the "det attitude." Most will admit that production will go up. After all, you wouldn't go if it didn't.

The question is whether or not everything will be done in accordance with normal operating procedures, or if there is a second set of rules for the det. Are your personnel operating off the "stored energy" from NAS home field? Are you hoping the aircraft coast along from previous efforts at home? Take a moment and be honest with yourself.

We can start with the squadron SOP (standard operating procedure). Those compiled by some squadrons include lists of special items which constitute a down aircraft. As we all know, it does not preclude adding to the list as the situation dictates.

An example might be Lcdr. Seagull downing his aircraft when the sweep-second hand of the clock wouldn't realign with the 12 o'clock position after pressing the reset button. It had nothing to do with the pitching deck or a dark rainy night. The question that arises is how many times did you press on with an aircraft that was legitimately down?

Virtually everyone has bent the list to some extent. After all, would you taxi back for a day bounce at home field if the TACAN failed to come on? Probably not. Unfortunately, your squadron SOP or aircraft maintenance instructions probably dictate this as a downing gripe.

You might find the example farfetched, but have you ever taken an aircraft during high tempo det ops which you might have downed at home field? Is it possible that the students

A State of Mind?

By Maj. Pete Shoaf, USMC, and Lt. James Hayman
VT-21

have done the same? Could common sense become eroded by "can do" spirit? Can this be fostered by the perceived pressure to get the "X"?

One might consider that operations away from home field have the potential to affect your normal judgment. While the factors are numerous, let us highlight a few. Let us first address recreation. At home we can describe recreation as subdued. For the most part it takes place in familiar controlled surroundings with little, if any, pressure. For those events which require recuperation, a familiar environment like your home or BOQ room is available where recovery is likely to be efficient and complete. However, on a det an individual's off-duty hours are likely to be spent in a manner unlike the normal routine at home. Let us take the individual who would like to go out for a good dinner after an honest day's work. Typically that means he will have to ride with a group in the limited transportation available. This makes it tough to "call it quits" after dinner unless the whole group is ready to turn in. The second problem that arises is rampant peer pressure. The most notable contribution of this environment is the esteem associated with your ability to consume. So now you've got two problems: You're up later than you want to be, and you're probably subjecting your body to a situation generally foreign to it. If you add that to the pure comfort of your short, narrow, saggy bed with sandpaper sheets and having to be serenaded to sleep by either your macho friends or the building's modern "quiet" ventilation system, your night of rest will have questionable value. Pleasant dreams.

Next, let us consider your *ego*. By definition, you're the "visiting team" and probably intend to show the "locals" what task-oriented, innovative, flexible, mission-oriented "can-do hackers" you are. This might take on special meaning when visiting an Air Force base, as the image of the entire Navy/Marine Corps is at stake, by your assessment. Whether it be a loud night at the club, harassment over their rigid adherence to detail or expounding on why your knowledge of the aircraft must be superior because you work in maintenance, the name of the tune invariably seems to come out as a quest for one-upsmanship. In response to this attitude, I'd like to paraphrase a quote that has informally made the rounds of naval aviation: "You can fly a thousand sorties and not be remembered as a pilot, but make *one* error in judgment and . . ."; well, you get the idea.

You can continue that loud night at the club another step if you choose. The object to have fun sometimes results in a challenge to cram as much fun into as short a time as possible. How many times have you told or listened to sea stories of that wild night? Personal repercussions from somewhat "questionable" activities during off-duty hours seem to be much less likely on a det. Accountability gets lost in anonymity. While Tom Wolfe's *The Right Stuff* is enjoyable reading, remember the times when there was a mishap rate more than *10* times the present one. The act of flying/driving while under the influence was once tolerated but is now more realistically interpreted as neglect by pilot review boards.

Moving to the work spaces, one must recognize the mental pressures associated with ensuring the det accomplishes what it set out to; concentrated training. It would be hard to justify the det in terms of funding, coordination and effort if the same training could be accomplished at home over the same period of time. Could this be a driving force in pressing weather, aircraft or personal ability?

Under a different set of conditions, an individual's personal life could have a marked impact on your det operation. Are there existing family problems which might be compounded and possibly result in judgment/performance inequities? Is the family having a hard time understanding how your "shore-duty" tour has you on the road so often? Does the squadron ensure that an equitable rotation exists to minimize the strain of multiple separations?

Finally, put yourself in the position of the officer in charge. Dets can accomplish a lot of training in a relatively short time. The training applies to all the participants. Remember that there are special problems to recognize at all levels. A det can be fun and also be effective. The little extra effort to do it right will pay big dividends. Put the same dedication into preparation as you would at home. Whether it be flying, maintaining or enjoying yourself after an honest day's work. Attitude is the key. Returning home short of your goals may not look good, but it would look a lot worse to return without the same number of people and/or aircraft with which you started the trip ◄

New ASO Lands Crippled Phantom — Provides Input to Own Hazard Report

By Bud Baer
Approach Staff

Yuma, Ariz. — "I was glad to be appointed Aviation Safety Officer of VMFAT-101, but little did I expect my first official act would be to write up my own hazard report."

Following his second touch-and-go in an F-4S, Capt. Robert W. Hillery, USMC, felt an abrupt, uncommanded roll and yaw to the right.

"It was like we ran into something — like a bird as big as a moose," he said. "The Phantom rolled violently to an 80-90 degree angle. My first thought naturally was to right it."

Radar Intercept Officer (RIO) Capt. Greg Paine, USMC, knew immediately there was something wrong because he, too, was jolted by the sudden roll to right. The seriousness of the situation became immediately evident when he heard Hillery mutter, "oh, s__t!" Every RIO shudders when the air is pierced by these magic words from the pilot.

"We were low (300 feet) and slow (170 knots) and everything was hanging out," Hillery noted. My initial reaction was to level the wings and get some altitude. I semi-righted the plane by putting in full left aileron and left rudder."

Hillery said he "tried to fly NATOPS" and made a "quick controllability check." Through a fast scan of gauges and a process of elimination, he determined the problem was neither electrical nor hydraulic. Because of its abruptness, he surmised it might be mechanical. Such reasoning, in words, sounds time-consuming but it was instantaneous.

"Have you got it?," the RIO asked.

"I think so," Hillery responded.

Paine looked back at the flaps and could see that neither was in the up position. Both leading edge slats were out. He then declared an emergency.

The tower offered the runway from which they had just taken off and asked if they wanted an arrested landing, which they did.

"At 170 knots, I knew we were controllable so we added 10 knots for the approach to landing," Hillery said. "Luckily the wind was very calm so we decided to make a landing in the opposite direction. I needed full left stick and full left rudder to complete the 180-degree turn. After we rolled out of the turn, about half left stick and rudder were needed to hold the wings level on final.

"We touched down under full control at 17 units AOA (angle of attack), popped the chute and got a good trap in the short field arresting gear. It sure felt good to be back on the ground in one piece."

"Our initial look at the aircraft showed the left flap was full down and the right flap almost full up. Below, on the ground, was a big puddle of hydraulic fluid from the right trailing edge of the flap area. The hydraulic lines had broken."

Subsequent examination of the right flap revealed a broken flap actuator bracket, probably due to material fatigue. This caused the flap actuator to fail, giving the aircraft a split flap condition.

"It was a learning experience," Hillery said. "Now we know that with full split flaps on takeoff, the plane is controllable. Another learning point was that if we had raised the flaps to half, it would have reduced the split flap condition but not without a price. That would have cost us altitude which we didn't have.

"If we had opted to fly longer, we may have experienced a more complicated problem. Although it wasn't obvious at the time, we were losing our utility hydraulics. On landing we probably would have been without boosted rudders, brakes and nose gear steering."

Because the flap actuator bracket on the F-4 is a depot level repair responsibility, it did not have to undergo regular inspections at the squadron level.

"From now on, however, it is included in phase inspections on all our F-4s," Hillery added. "I'm glad we have the answer as to what caused the problem."

"Failure of the flap actuator bracket is extremely rare," said Lt. Col. Gary Braun, who commanded VMFAT 101 at the time of the incident. "Aircrews must be prepared for split flaps anytime, especially during configuration changes."

This crew was ready, worked through it and brought it home." ◄


20
BRader

On Display: John Q. Public Meets An Airplane

By Peter B. Mersky
Approach Staff

THE skipper looked down the table at the assembled aviators of his squadron. He was about to task one, perhaps two, lucky souls with one of the most dreaded assignments any member of a flying squadron can face. It would require courage and intestinal fortitude, proper planning and a thorough knowledge of himself and his aircraft. To be assigned this mission was to be fated to a weekend of activities for which Navy training — the best though it is — could not have prepared the "chosen one(s)." STATIC DISPLAY!

"Aww-w, no, skipper! I did the last one — last year! Besides, my wife's got a barbeque planned for that weekend!"

High on the list of non-preferables, it is a fact that squadrons and air bases get many requests every year to either supply aircraft for regional functions or conduct an open house during such appropriate holidays as Memorial Day or the Fourth of July. Many folks see these public contact exercises as distinct pains in the posterior, taking up valuable military resources and cutting into an individual's weekend or vacation time.

It's unfortunate that static displays are looked upon by many in the flying business as repugnant — even demeaning — activities for aviators. These types of functions are one of the best ways for the public to see where their tax dollars go and to talk with real live aviators. Displays are, therefore, a great recruiting tool which perpetuate the species. Many a youngster's dream of flying for the Navy was kindled by seeing his first airplane up close or talking to a square-jawed, steely-eyed and salty naval aviator at an open house.

Now, everyone can't be a Blue Angel (or even a Thunderbird), and the opportunity to take part in a static display carries some rewards which may be somewhat intangible. Nonetheless the event can be quite satisfying. But, like everything else connected with the military, there are basic rules and applications of common sense which are concerned with such activities such as static displays. Safety of the public is paramount in any static display, especially around the aircraft.

The recently designated plane commander took his aircraft to NAS Keystone to participate in a major holiday open house. Since he came from the local area, as did his copilot, the PC was looking forward to spending the holiday with family and friends, bringing them out to see the show. On reaching NAS, the crew found that no appropriate barricades were available. The station personnel said that ropes were available only through prior arrangement. No biggie; the crew secured the airplane and scattered for the night.

The following morning, the PC arrived at 1030, just in time to see two civilians trying to enter the aircraft. The would-be sightseers gave up and left before the anxious and somewhat irritated PC could reach them. Shortly afterward, the rest of the crew arrived and took stations at various points around the aircraft to coordinate tours and field questions from the crowd now rapidly appearing at the display area. At certain times, the crew's attention was diverted, and an excited boy entered the aircraft, seating himself in the pilot's seat. As he explored the wonders around him, the seat was fired. (The aircraft was equipped with the ESCAPAC system, requiring the headknocker to be placed in the "up" position and the primary ejection handle pulled to effect the ejection. Given the nature of the system and the innate curiosity of a young boy, one can draw only one conclusion as to how the ejection occurred.) As can be imagined, this tragic event cast a pall over the open house.

How had the boy managed to get in the plane, unnoticed and unsupervised? Everyone was around the aircraft as they should have been, but no crewmember was actually stationed inside the cabin where the high summer temperatures made things pretty unbearable. Perhaps the crew was too distracted by the crush of the crowd to properly oversee the constant flow in and around the aircraft. Lack of liaison with the host air station *prior* to arrival also may have contributed to the chain of events, along with a lack of written squadron procedures regarding static display safety precautions. There is also a lesson to be learned regarding the seemingly logical assumption that common sense would prevail around such displays regarding public actions and interests. The lesson can be stated as something of a corollary to Murphy's Law: If you can think of something going wrong, chances are it can, or will, SOMEWHERE.

Nowadays, it is a blanket rule. Canopies are closed, seats pinned. Canopy jettison handles should be taped secure, and NO ONE allowed access to the cockpit. Of course, a boarding ladder or similar SAFE apparatus can be provided alongside the aircraft so that spectators may look inside to their heart's content. (A few years ago, a young spectator climbed inside an open T-28 cockpit and closed and locked the canopy, ignoring all attempts to extricate him until he had had enough. Finally, the cockpit became too hot and he opened the canopy.)

Other openings — intakes, orifices, gun ports — and doors — landing gear and inspection panels — are also to be secured in a manner to prevent their being opened inadvertently by unauthorized personnel. This is especially good for the aircraft to prevent fodding the engine through the intakes. Other areas of concern should involve proper chocking of the aircraft once in place for the display, as well as any guard rails and barriers around any potentially dangerous areas of the plane itself.

Once the display is over and the crowds have gone home, thought should also be given to policing up the immediate area and checking for possible FOD. Wherever there are gatherings of people, there's bound to be trash, and a careful check of all openings and wells is essential. Someone could have placed a cup or wrapping on a convenient intake lip or surface and walked away. Perhaps little Johnny — or Joannie — chose to deposit chewing gum down the intake or even use it as an experimental covering for a pitot probe. Even if you know your aircraft thoroughly or are not given to an in-depth preflight (why not?!), it is advisable after a static display, especially one where the public was able to get up close to your plane, to make a painstaking inspection of your charge before strapping in for takeoff.

COMNAVAIRLANTINST 5700.1D, for example, gives some general guidance in this area. "Subsequent to the display, ensure that the taxi route from the display area to the active runway is completely clear of all obstacles and foreign objects which could result in a taxi accident or FOD to jet engines. This requirement is particularly pertinent at night or when large numbers of people have had uncontrolled access to the taxiways involved."

A further consideration *after* the display is not to give in to the temptation to conduct any kind of departure display, even if the station authorities ask for it. A low transition or roll after takeoff come to mind as the most inviting of such maneuvers, and also the most potentially dangerous.

The warm weather usually brings its fair share of open houses and displays, and although standing in front of your airplane in flight gear to answer questions from a wide-eyed public, or perhaps listening to rambling memories from some aging one-time crewman, may not be on your list of things to do with your spare time, these situations probably provide John Q. with his only real chance to see and inspect a military aircraft. ◄

Can I Relax Now?

By Lcdr Larry Sein
VF-126

AT what point does the pilot allow himself the luxury of relaxing after flight? Is it once the wheels are on deck and the brakes check good? Or is it when you realize that the arresting gear is not going to be needed? Is it after you slow down to taxi speed? Or is it after you have turned off the runway? All of the above and then some? How about after the chocks are in place and the engine is secured?

Point being, we all have our own quirks and areas where we finally let our guard down and consider the flight terminated. For those who consider the turn-off from the duty runway as their point, consider the following scenario which occurred not too long ago in a place not too far away.

The mishap aircraft was the lead of a two-plane flight returning from a dissimilar ACM (air combat maneuvering) hop. A cold front had passed the station earlier, bringing with it the typical rain showers and gusty wind conditions. The last one-third of the runway had patches of standing water, with the first two-thirds being dry. Braking action had been reported as good. Runway 8L was in use. The tower reported reported 150 at 15-20 knots with occasional gusts to 25 knots.

The mishap pilot in the TA-4J reviewed the crosswind landing techniques in his mind and made a normal landing.

After touchdown, he held the stick forward and into the wind. He checked the spoilers up, raised the flaps and applied the brakes. The aircraft slowed to 15-20 knots crossing the long field arresting gear.

As the aircraft entered the area of rubber deposits and patches of standing water it began to yaw into the wind, skidding at approximately 40 degrees off runway heading. Rudder and nose gear steering had no effect on the skid which had now progressed to 60 degrees off heading. The pilot deactivated nose gear steering.

The wind picked up the right wing, tipping the aircraft onto its left wingtip. After skidding for another 50 feet, the nose landing gear collapsed. The aircraft tipped back onto both main mounts and came to rest with its nose cone two feet off the right side of the runway. The engine was secured and the crew left the aircraft.

The mishap pilot was a fully qualified, experienced aviator with hundreds of crosswind landings under his belt. He performed everything "by the book" as far as NATOPS and SOP are concerned. He was mentally prepared for the landing and was right on top of the situation all the way. Yet he still *got bit.* He became a spectator in that he was unable to exercise any control over what was happening to his aircraft, even at 10-15 knots.

This gives credence to the age old adage that sez, "The flight is not over until the paperwork is completed and your flight suit is hanging up back in your locker." ◄

NATOPS Word Search

S U R B A B D A Y N I G H T D I S T R E S S F L A R E S
T T D C F L A S H L I G H T C A T P Z R T N E C S E D P
U N T E K N A L B E C A P S H R O U D C U T T E R Z M S
O E C G A B E G A R O T S R E T A W A P U F R I O U L I
L M A A R A C K O V H T O T H G I L N E P A R A P A O G
I T N E B E A C O N B N O I M A S O Z O L E A D N M N N
A N O T R A N I G K A A D U A Y T Y I F G X N D Y I S A
B I P A T D N J N F T L T B R E W B A N D A I D S R R L
K O E U I A I H U L T A E C G N H A I L H N T S G N E L
D N N C K B D M G T L H E D N D I S A O G R E Y E U K I
E R E A D I W C E O E N V F I C S Q X M S R X Q R G R G
S U R V I V A L R A D I O X N E T O U U D O I E S E A H
A B G E A U T T A R R A Z O R B L A D E E Y T G H R M T
L N E F T Q E O L Q E I S D A R E O Y P T A E R S A E A
T U D I S P R P F S S N E G W U Z E O D R O C N O L Y N
E S O T R A T I O N S O Y K J E R I F E K A R B N F D R
R N O S I T T E J P I M U I N O K L A Z N E B I H L S E
K A P U F I R E M Z N M V U L R O R R I M L A N G I S K
I X Y D I T C H I N G A U Z E S A P R S S A P M O C V O
T H G I L E B O R T S U R V I V A L K N I F E P S N O M
L N O Z W A T E R P U R I F I C A T I O N T A B L E T S
E G N O P S G N I L I A B D H E F I N K T E K C O P A K

Life Vest

Day/night distress flares (MK-13)
Shroud cutter
Pen light
Signal mirror
Strobe light
Survival knife
Whistle
Pencil flare gun
Flares

First Aid Kit

Bandaids
Razor blade
Benzalkonium (Mercurochrome)
Gauze
Water purification tablets
Ammonia inhalant
Petrolatum gauze
Dressing
Eye dressing
Battle dressings
Tourniquet

Life Raft

Day/night distress flares
Flashlight
Space blanket
Water storage bag
Survival radio
Nylon cord
Rations
Beacon
Flare gun (MK-79)
Sunburn ointment
Can opener
First aid kit
Canned water
Hand pump
Signal light (steady burning)
Dye marker
Whistle
Desalter kit
Pocket knife
Bailing sponge
Strobe light
Compass
Signal mirror

After you find those items listed above, see if you can find ditching, APU fire, rack OVHT, bailout, brake fire, jettison, descent, evacuate, landing, warning, caution and note. They are all there.

Submitted by AX2 R. Bradfield, VP-11

Prepared for the Worst

By Lcdr. Mike Vogt
VA-55

"The container is vapor-proof, buoyant and can easily withstand . . . rough handling . . . .

HAVE you ever felt compelled to buy a tool or something else that you hoped you'd never have to use — just in case? How about those flares in the trunk of your car or those jumper cables gathering dust out in the garage? If you're like me, your natural optimism ("it can't happen to me") is tempered by the harsh realities of life, and you feel a little uneasy when things aren't proceeding exactly the way you planned. You just *know* that something is about to go wrong.

Nowhere is this need to be prepared for the worst more important than in naval aviation. As the saying goes, our careers consist of hours of boredom, punctuated by moments of stark terror. For those of you who have had the misfortune of being on a mishap investigation team and sifting through tangled pieces of wreckage, I don't have to elaborate about being prepared. For those who haven't, I think I can offer a suggestion that could at least ease the mechanics of a mishap investigation.

Our squadron recently purchased (that's right, *bought* with 7F funds) a mishap investigation kit, the likes of which I have never seen. Our fledgling aviation/maintenance safety team carefully researched the availability and suitability of this prepackaged kit versus a "homemade" version and concluded that the kit would most easily and completely suit our needs.

The sturdy (understatement) container is vapor-proof, buoyant and can easily withstand not only onloads/offloads from the ship, but also rough handling in the field. The separate halves of the container contain shock mounting to protect such things as the tape recorder, camera and measuring instruments. I won't begin to list the remaining contents of the kit, but the accompanying photos should support my feeling that there is probably not a more complete mishap investigation kit in the fleet.

Unlike the Johnny Carson/Ed McMahon quip . . . "It has *everything* you will *ever* need" . . . it does have some drawbacks. There are no stakes for marking positions of the crash site (although there is surveyor's tape), and the complete kit is rather cumbersome (9"H x 22"L x 18"W/55#). (We're trying to modify a standard back pack frame to accommodate the kit.) There is room in the container to "customize," if desired (I've added a Polaroid camera, extra film and batteries, for example).

In short, I'm impressed with this kit and strongly recommend it if you are in the market to upgrade your present capabilities. It is available through normal supply channels, using the following information:

Nomenclature — Tool Kit, Army Aircraft, Crash Investigation
NSN — 5180-00-903-1049
Price — $824.00

I'd be happy to address any questions you might have regarding this kit and can be reached at (AV) 433-2211, Ext. 606/611. I can also provide copies of the descriptive literature that accompanies the kit. Expect about six weeks to two months for delivery.

In closing, I sense there are some burning questions that

need to be answered .... Yes, I've got flares in the trunk and a set of jumper cables for each car, and I even carry an extra PRC-90 battery in my trusty SV-2 (along with various and sundry items such as a toothbrush, socks and a change of skivvies). Is this a sign of paranoia or a typical naval aviator's healthy outlook on survival? I'm not sure . . . but one thing's for certain — I hope the time never comes when I'll need any of those items . . . *or* a mishap investigation kit. I'm comfortable with the knowledge that I'm prepared for the worst. How about you? ◄

Editor's note: For those of you who do not recognize VA-55, it is the Navy's new A-6 squadron based at NAS Oceana.

The Approach staff has had some telephone requests for the contents of the kit already, so here it is:

6 mailing bags
1 box of plastic bags
6 screw cap bottles
1 35mm camera w/case
1 steel can (1 gal.)
1 cassette recorder w/cassette
2 pieces of chalk
1 lensatic compass
5 sample and specimen container assemblies
1 first aid kit
1 flashlight
1 thickness gauge
2 pair cloth gloves
1 pair asbestos gauntlets
1 pocket knife
1 surveying level
1 magnifier
2 boxes of markers (black and red)
1 inspection mirror
3 dozen grease pencils (black/red/yellow)
1 plastic sheet
1 diagonal pliers
1 slip joint pliers
1 protractor
1 magnetic retrieving tool
1 roll surveyor's tape
1 steel ruler
3 screwdrivers (large, small, Phillips)
60 shipping tags (both paper and cloth)
2 rolls adhesive tape
1 measuring tape
4 sampling tubes
1 ball of twine
1 adjustable wrench

Keep in mind that this will probably not be everything you will need for an investigation, but it covers the basics. — Ed.

The author (left) and Ltjg. Terry Kraft showing the relative size of the kit.

Needed: Water Survival

By Lt. James R. Sebastian
VAW-113

"Petty Officer BLOWN OVBD BY A-7 JET BLAST SAR UNSUCCESSFUL." It seems that a terse sentence like this appears on the squadron message board at least once a month. The victim's rate may vary, the circumstances that put him in the water may be unique, but the results are far too often the same: "SAR UNSUCCESSFUL." So far my squadron has been lucky; the only time DAVEY JONES gets one of our people is during the Shellback ceremony. The victim's suffering is minor and quite temporary compared to those who become permanent residents of King Neptune's realm.

So why can't these guys stay afloat until they're rescued? Some may be too severely injured by their fall from the flight deck to survive, but I can't believe that happens to all of them. The problem could be their basic water survival skills.

How well prepared are our men for survival in deep water? Aircrews receive top-notch training in every aspect of water survival, and they are requalified every few years. Recruits are trained in basic water survival techniques at boot camp. *They do not, as a general rule, receive any follow-up training.* In fact, from the time a recruit finishes swimming instructions at boot camp to the time he retires as a grizzled and salty Master Chief he is under no obligation to so much as enter a wading pool! Consequently, swimming skills that may have been shaky at best have no place to go but down.

The Safety Department was curious to find out how our squadron would fare in a water survival situation, so we came up with a 20-question survey. The methods we used to tabulate the results would probably bring tears to the eyes of the Gallup Poll people, but the results we obtained were eye-opening: About 25 percent of our squadron would be in very serious trouble if they ever fell overboard.

To be a little more specific, the survey revealed that within our squadron:

— Thirty percent indicated they would require rescue in

Training for Non-aircrew

less than five minutes in order to avoid drowning.

— Twenty-five percent indicated they didn't know the proper techniques for abandoning ship from an elevated flight deck.

— Thirty-five percent were unfamiliar with the techniques a SAR helicopter would use to rescue them.

— Forty-two percent of those questioned felt they didn't know how to preserve body heat in cold water. (When asked to choose between swimming vigorously to generate body heat and curling up in a position similar to the HELP technique, however, 78 percent correctly chose the latter.)

— *Sixty-two percent of those questioned did not know how to drown proof!*

The final question on the survey asked the participants if they had been adequately trained to survive in an emergency situation on the high seas. Forty percent felt they had been trained adequately or very well; 27 percent felt they had been trained fairly well, but could benefit from a refresher session; 27 percent felt they had not been trained very well. The remaining six percent chose the response, "If I go over the side, I'm fish food." (I assume these people count themselves with the poorly trained group.)

Training is an ongoing process. The only way to avoid the atrophy of skills developed in boot camp is by periodic requalification. There is currently no formalized method of doing this. Until a formalized program does come along, the initiative to provide follow-up training lies with the individual squadron. Here at NAS Miramar, each squadron has been tasked to conduct an in-house program using either the enlisted swimming pool or the facilities at aviation physiology. We provide our own instructors. Participants train in drown-proofing, clothes inflation and proper use of their life preservers. A qualified lifeguard will be standing by just in case we need one. GMT lectures on helicopter rescue procedures, abandon ship procedures and cold water survival are part of the program as well. The American Red Cross Swimming and Water Safety Manual is our final word on water survival and is a good reference text.

Our goal in all of this is to ensure that every man working on the flight deck is a second class swimmer or better. Of equal importance is the assurance that the rest of the squadron have the skills needed to survive in the water as well.

What we really need is some help from the real water survival experts in the Navy. A formalized refresher program is a must. Until we get one, though, we're going to do what we can to take care of our own. How about your outfit? Are your non-aircrew shipmates adequately prepared for water survival? Conduct a survey of your own. The results may surprise you.

Editor's Note: The statistical information that follows was submitted by the Aeromedical Division of the Flight Safety Center, which has conducted a review of man-overboard data.

Since 1980, 211 personnel were recorded as unintentional man-overboard or overboard missing due to unknown reasons. Among these, use or lack of use of a lifejacket or life preserver was specifically reported in 106 cases. Among the 50 who entered the water with a lifejacket, only three drowned 94 percent survival rate. Of the three fatalities, two were apparently knocked unconscious prior to water entry and one removed his life preserver before rescue.

Among the 56 who entered the water without a lifejacket, 11 drowned 80 percent survival rate. Of these fatalities, three appeared to be unconscious in the water, three were unable to swim to a lifering or even stay afloat, four were not wearing a lifejacket and one was unwitnessed.

Among the 45 survivors were five individuals who were able to swim to a lifejacket or lifering which was thrown to them after they entered the water. Of the other 105 personnel, where use or non-use of a lifejacket was not reported, 17 were fatal 84 percent survival rate. Better reporting would have allowed for a more accurate determination of the above survival rates as relating to the use of lifejackets.

The strict enforcement of existing regulations requiring the use of life vests, life preservers, safety harnesses, etc., should be of paramount importance. This effort should be coincidental with strict preventive maintenance and training related to the equipment and ultimate rescue procedures.

Insufficient data is available to determine the exact importance of varying swimming abilities. A sailor in the water with no floatation available would obviously need to rely on all his abilities to stay afloat and stay alive. Interacting with varying sea states, white water or the ship's screws and possible injuries add many unknown elements. Being able to swim to a lifering or just staying afloat for two-three minutes while awaiting rescue by boat or helicopter could have made a difference in several of the fatalities. ◄

LETTERS

Re: Overwater Post-ejection Procedures

Norfolk, Va. — The actual water survival episodes reported in Approach are invaluable to those of us who instruct in the Naval Aviation Water Survival Training Program (NAWSTP). However, three times in the past 14 months ("You're on fire, EJECT," February 1983; "Flat Spin in an F-14," July 1983; and "A Unique Survival," March 1984) the post-ejection procedures have been given as 1RSOK (inflate LPU, raft, snap lobes or stabilize chute, depending on which story you read, remove oxygen mask, release Kochs) with no mention made that these are not the current procedures and have not been since 1981. The current CNO-approved overwater post-ejection procedures are 1ROK:

- inflate LPU
- deploy seat survival container (raft)
- options (no priority), snap LPU lobes together, remove oxygen mask, activate four line release system, raise helmet visor
- release Koch fittings upon water contact

The rationale for these changes is outlined in a message from NAVWPNCEN CHINA LAKE CA 262300Z JUL 83.

Standardization and proficiency are key factors in avoiding confusion during high stress situations requiring split-second reactions. The 1ROK procedures are the result of a dedicated testing effort, and we did not want to perpetuate out-of-date information.

Aviation Physiology Training Branch Staff
Naval Medical Clinic

• 1ROK is the current acronym and we should have mentioned it. — Ed.

Re: My Final Approach (Mar '84)

Good sea story Russ (Forbush). However, it was the old B-26 that was the "Flying Prostitute," not the PV-1.

(signature unreadable)
ex-Naval Aviator

• Sure, the B-26 was known as the "Flying Prostitute," but no one told those of us flying PV-1s that the term was copyrighted. Nevertheless, I should have mentioned it in my article. Thanks for writing. — R.F.

Arlington, Va. — I was in Combat Air Crew Training at Beaufort, S.C., at the time of your (Russ Forbush's) landing in the PV-1. Unless I am mistaken, I was in the jumpseat. I have often told the story of a pilot who almost killed me. This sounds a lot like it. We were on approach when the instructor said, "I am not going to do anything unless you ask me." The aircraft was not trimmed and the left wing dropped. The student threw up his hands and took his feet off the pedals. He yelled, "I lost it." The instructor added power on the left engine, stabilized the aircraft and regained control.

It was not until years later that I got my pilots license. I am sure this experience has helped me in my present position.

Donald W. Dwyer
Air Safety Investigator
Accident Investigation Division
Office of Aviation Safety
FAA

• I can't believe that after 40 years, the aircrewman occupying the jumpseat on my infamous flight read my article and responded with a letter. We're both lucky that the instructor was on the ball and saved us and the aircraft. I'm glad to hear that this experience helped you in your present position as an FAA Air Safety Investigator. As I said in the article, I learned my lesson about wrapping up an aircraft when close to the deck. The next time I'm up D.C. way, I'll give you a call. — R.F.

Re: Safety Ain't Boring

NAS Barbers Point, Hawaii — "SAFETY STANDDOWN." These two words probably conjure up in one's mind the epitome of boredom. A safety standdown is supposed to mean a "day designated by the commanding officer to review flight procedures, work practices and the use of current maintenance publications to ensure everyone is doing their job safely." Sounds good on paper. In reality, it usually means listening to boring lectures and seeing boring films. For maintenance, safety standdown means "time lost that would have normally been used to get those down gripes fixed." For the OPS officer, safety standdown usually brings groans of despair, "How does the skipper expect us to fly our scheduled hours if we lose a day of flying?"

What does safety standdown mean to the safety department? It means many questions are asked, such as: "What do we do this time? What speakers can we get to come out and give us a lecture? What films can we show? When can we schedule it? Where can we get the entire squadron together?" The list goes on and on. But everyone is missing the point. The point is to try to stimulate interest in SAFETY and professionalism rather than just having another boring day. Instead of "standing down" and getting into safety, we should be "standing up" and letting safety get into us. This is best accomplished by a safety review.

But how do you conduct a safety review for a large outfit tasked with around-the-clock operational commitments without disrupting the normal daily work/flying routine too much? Simple — set up small groups and stretch it out over a period of several days.

We do it here with some success. We invite industry people to talk with us on specialized subjects and exchange ideas. There has been dynamic interaction at these informal meetings around the base and squadron spaces. Every member of the squadron learns from this program. All hands feel better prepared to assume their roles as members of the finest fleet air reconnaissance squadron in the Navy. We *stand up* for safety!!!

AD1 John Luckey
Safety Petty Officer
VQ-3

Re: Mishap Investigation Tips (May 84)

Pensacola, Fla. — Under the "Do" column, I would change "Interview witnesses early before . . ." to "Interview witnesses early, with a small tape recorder, before . . ."

Many small hand-held tape recorders are on the market. The use of one would help ensure important information is not left out of the report.

J.R. Sturm
Officer in Charge
Naval Technical Training Center Det.

• This is a good idea, but keep in mind that the use of the recorder should *always* be optional for a witness. Nervous witnesses can "clam up" as soon as you hit the recording button. In cases where a witness does not want to be recorded, you can use the tape recorder immediately after the interview to recount the information while it is still fresh in your mind.

Capt. J.C. Smith
Director, Aviation Safety Programs

APPROACH welcomes letters from its readers. All letters should be signed though names will be withheld on request. Address: *APPROACH* Editor, Naval Safety Center, NAS Norfolk, VA 23511. Views expressed are those of the writers and do not imply endorsement by the Naval Safety Center.

☆ U.S. GOVERNMENT PRINTING OFFICE: 1984-739-008:108

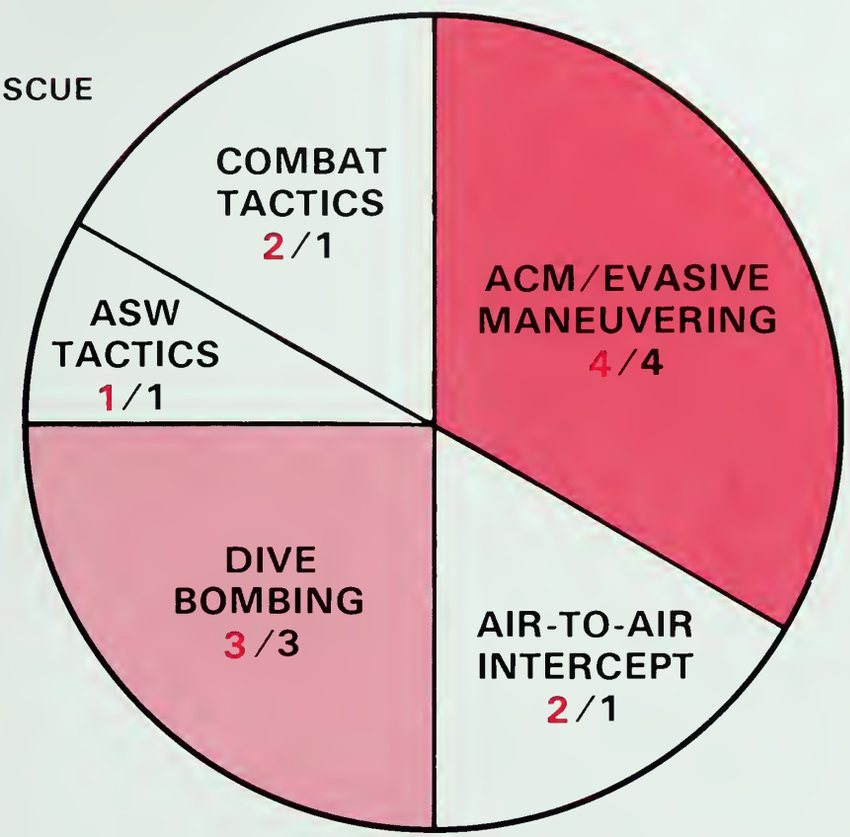
ALL MODELS

ALL NAVY and MARINE
HIGH RISK FLIGHT REGIMES
CLASS A MISHAPS/PILOT CAUSAL FACTOR
CY 83 (THRU AUGUST)

OPERATION

A — OFFENSIVE MANEUVERS
B — CARRIER LANDING
C — FORMATION
D — CROSS COUNTRY
E — CARRIER QUALS
F — AEROBATICS
G — FCLP/FMLP
H — SEARCH AND RESCUE

12 OFFENSIVE MANEUVER MISHAPS



Statistics by M.S. Borowsky
and Vicki Kojscich
Graphic by Frank L. Smith

NAVY COMMENDATION MEDAL AWARDED FOR APPROACH CONTRIBUTIONS

Lcdr. Joe Towers, VR-57 Aviation Safety Officer

The Secretary of the Navy takes pleasure in presenting the NAVY COMMENDATION MEDAL to

LIEUTENANT COMMANDER
JOSEPH FRANCIS TOWERS
UNITED STATES NAVAL RESERVE

for service as set forth in the following citation:

"For meritorious service while serving as a naval aviator for Fleet Logistics Support Squadron Five Seven, Naval Air Station, North Island, San Diego, California from November 1981 to March 1983. Lieutenant Commander Towers wrote four feature-length articles for Approach magazine, which alerted the naval aviation community to the hazards of wind shear. Several inputs to the Approach staff have indicated that lives of naval personnel and naval aircraft have been saved as a direct result of these articles. Lieutenant Commander Towers is now recognized as one of the leading experts in the world on the subject of wind shear, a distinction which goes far beyond the requirements of his job. His work reflects his technical expertise and his exceptional writing ability. Lieutenant Commander Towers' exceptional professional ability, initiative and loyal dedication to duty throughout reflect great credit upon himself and were in keeping with the highest traditions of the United States Naval Service."

For the Secretary,

W. D. Daniels
Rear Admiral, U.S. Naval Reserve